

REQUEST FOR RECONSIDERATION
U.S. Application No. 09/853,674

5,743,975) and Koch (US 6,012,498). Claims 7-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato '411, Sato '410, Sinopoli, and Koch as applied to claim 2 above, and further in view of Bourgois (US 5,198,307). Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato '411, Sato '410, Sinopoli, and Koch as applied to claim 2 above, and further in view of Kawase (US 3,929,180). Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato '411, Sato '410, Sinopoli, and Koch as applied to claim 16 above, and further in view of Mechanics of Pneumatic Tires (page 881). Applicants respectfully traverse this rejection in view of the following remarks.

In the Amendment filed August 23, 2005, independent claim 2 was amended to recite:

the belt layer is formed of two belt plies, and given that G_1 is a total thickness of the two plies, G_2 is an interval between metal wires of a radial direction inner side ply and metal wires of a radial direction outer side ply, and δG is an interval between the metal wire bundles in each ply, relationships of the following formulae are satisfied:

$$1.00 \text{ mm} \leq G_1 \leq 2.00 \text{ mm} \quad (1)$$

$$0.32 \text{ mm} \leq G_2 \leq 0.65 \text{ mm} \quad (2)$$

$$0.25 \text{ mm} \leq \delta G \leq 1.00 \text{ mm} \quad (3).$$

In addition, a Declaration under 37 C.F.R. § 1.132 was submitted showing the unexpected and superior effects of the present invention which are caused by the feature of " $0.25 \text{ mm} \leq \delta G \leq 1.00 \text{ mm}$ " as defined by claim 2.

In response to the Amendment and Declaration, the Examiner asserts that:

it is agreed that none of the examples of Sato '410 expressly teach the claimed bundle spacing in each of the belt plies. However, it is clear that

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the bundle spacing is a function of the number of filaments per bundle and the filament diameter and as such, one of ordinary skill in the art at the time of the invention would have found it obvious to form a tire design in which the bundle spacing was between 0.25 mm and 1.00 mm absent any conclusive showing of unexpected results.²

In response to the Declaration, the Examiner states that:

the declaration under 37 C.F.R. § 1.132 filed August 23, 2004 is insufficient to overcome the rejection of claims 2-9, 11-14, 16-20, and 22 based on Sato '411 as set forth in the last Office action because the results fail to provide a conclusive showing of unexpected results (in regards to the bundle spacing). In particular, while the two examples (11 and 12) show suitable marketability, the structure of the reinforcing material is not constant between the respective examples (e.g. the structure of the bundles is different). Thus, it is unclear if the benefits can be attributed to the bundle spacing or the specific bundle structure. A more persuasive test to demonstrate the importance of the claimed range (bundle spacing) would involve the same reinforcing structure and increasing bundle spacings. Lastly, the data supplied in the declaration further emphasizes the examiner's position that the bundle spacing is a function of the bundle construction (increased spacing with increased number of filaments). (emphasis added).³

Applicant respectfully disagrees with the Examiner's position. In particular, neither Sato '411 nor Sato '410 discloses or suggests the claimed interval (δG) between the metal wire

² July 29 Office Action at page 10.

³ July 29 Office Action at pages 10 and 11.

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bundles in each ply, i.e., " $0.25 \text{ mm} \leq \delta G \leq 1.00 \text{ mm}$ ". In fact, in all of examples 1, 2 and comparative examples 1-10 described in Sato '410, at least one of the respective cord intervals (D1; D2) of the two belt layers (31, 32) is outside the aforementioned specific range of " $0.25 \text{ mm} \leq \delta G \leq 1.00 \text{ mm}$ " of the present invention.

Specifically, in example 1 of Sato (JP 11-78410), D1 is 1.03 mm and D2 is 0.72 mm. Therefore, although D2 is within the aforementioned range of " $0.25 \text{ mm} \leq \delta G \leq 1.00 \text{ mm}$," D1 is outside the range. In example 2, in which D1 is 1.20 mm and D2 is 0.72 mm, D1 is outside the range. Both D1 and D2 are very small in comparative example 1, while both D1 and D2 are very large in comparative examples 2, 4, 7 and 9, whereby both D1 and D2 are outside the range in these comparative examples. In the remaining comparative examples 3, 5, 6, 8 and 10, *one of* D1 and D2 is outside the range.

In contrast, in the present specification, there is clearly stated in the second full paragraph of page 14 thereof that the interval (50) between the metal wire bundles in each of the two belt plies should satisfy the formula (3), i.e., $0.25 \text{ mm} \leq \delta G \leq 1.00 \text{ mm}$. The δG range has thus been specified in the present invention, on the basis of the discovery that, "When δG is less than 0.25 mm, the generation and growth of belt end portion separation cannot be suppressed. When δG exceeds 1.00 mm, due to the interval between the metal wire bundles becoming too large, the belt rigidity decreases, and the penetration resistance when the tire rides over nails or the like is poor" (the last line of page 14 to line 5 of page 15 of the present specification).

As shown in the Declaration Under 37 C.F.R. § 1.132 showing the unexpected and superior effects of the present invention which are caused by the unique feature of " $0.25 \text{ mm} \leq$

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$\delta G \leq 1.00\text{mm}$ ” defined by claim 2. As marketability of the tire, in terms of “separation length”, is ensured when δG is within the recited δG range, while the same marketability of the tire is not ensured when δG is outside the range, Applicant respectfully submits that the superiority of the effect is unequivocal.

The characterization of certain limitations or parameters as obvious does not make the claimed invention, considered as a whole, obvious. It is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This burden can only be satisfied by an objective teaching in the prior art or by cogent reasoning that the knowledge is available to one of ordinary skill in the art. See *In re Lahu*, (747 F.2d 703, 223 U.S.P.Q. 1257 (Fed. Cir. 1984)). However, Applicant respectfully submits that the Examiner’s assertion that “bundle spacing is a function of the number of filaments per bundle and the filament diameter” is not supported by the teachings of the cited references or general knowledge of those skill in the art.

While the total thickness of the plies and the interval between filaments of a radial direction inner side ply and filaments of a radial direction outer side ply may be considered as a function of the diameter of the filaments, the interval/spacing between the bundles in each ply is not necessarily restricted or determined by the number of filaments per bundle and/or the filament diameter. Moreover, in the Sato references, there is no description or even suggestion of restricting the interval (δG) between the metal wire bundles in each ply to the claimed range.

Accordingly, Applicant respectfully submits that claims 2-9, 11-14, 16-20 and 22 should be allowable because the combined references do not teach or suggest all of the features of the

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claims, and one of ordinary skill in the art would not have been motivated to modify the combined references to produce the claimed invention.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Christopher R. Lipp
Registration No. 41,157

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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